Dr. Michael S. Frankel
Chair, Army Science Board
103 Army Pentagon
Washington, DC 20310-0103

Dear Dr. Frankel:

I request that you conduct an Army Science Board (ASB) Summer Study on "Concepts and Technology for the Army Beyond 2010." The study should address, as a minimum, the Terms of Reference (TOR) described below. The ASB members appointed should consider the TOR only as guidelines and may include in their discussions related issues deemed important or suggested by the sponsors. Modifications to the TOR must be coordinated with the ASB Office.

Background.

a. Assessing the future and crafting an associated vision of future Army requirements demands a process that anticipates the nature of warfare in the next century as well as the evolution of US national security requirements. In addition, the process should consider visions and concepts for joint and combined operations, and the expected technological capabilities that can support these requirements. For that purpose, the Army After Next (AAN) is conducting broad studies of future warfare to frame issues vital to the development of the Army and to provide those issues to the senior Army leadership in a format suitable for integration into the Concept Based Requirements Systems and the TRADOC Requirements Determination process. To ensure a comprehensive and holistic perspective focused on the year 2025, the approach is organized around four broad research areas: the geostrategic setting, the evolution of military art, human and organizational issues, and technology trends. It is this latter area to which this study broadly addresses itself.

b. The Army's leadership must soon determine how to apportion research and development resources among a host of competing technological alternatives. Also, it must determine how much of the Army to modernize along current lines before superseding Army XXI (the "programmed force" falling largely within the influence of the Program Objective Memorandum (POM) covering the next 5-to-7 year period) systems with new technologies and significantly different operational and organizational concepts, thereby creating the "potential force" which is described by (1) the AAN project; (2) the concepts development process (see TRADOC Pam 525-5); (3) the TRADOC Requirements Determination process which includes an experimental process through the Battle Labs; and (4) S&T programs such as AAN 6.2 STO Enhancement Program, ACTD, ATD, ACT II and other such advanced concept and technology projects.

c. Planning for the distant future tends to concern capabilities and possibilities—the *how* rather than the *who* or *what*. While pragmatic near-term planners try to improve existing systems, longer term visionaries can deal in theory and emerging capabilities in a

more abstract fashion. The challenge is linking the two without allowing the present to consume the future, or the vision to become intellectually sterile. The Battle Lab Integration, Technology and Concepts programs and the AAN program are primarily focused on treating the potential force. Here the focus shifts from improvement of fielded capabilities to long term research and development programs; and from current and programmed force structures to as-yet-unspecified capabilities associated with the emerging vision and concepts of future warfare.

d. The Battle Lab Integration, Technology and Concepts program and the AAN program are the primary link to other DOD agencies engaged in long term development—for example, Defense Advanced Research Projects Agency projects and various Defense Science Board studies. Some of these efforts frequently push the outer bounds of practicality. Moreover, because the potential force is generally not hostage to the POM, it represents the most promising opportunity for true integration with sister Service concepts, such as the Air Force's ultra-high-altitude UAV and the Army's lead of the DARPA Small Unit Operations project.

Terms of Reference.

a. Receive briefings on concepts that include, but are not limited to, Small Unit Operations (the subject of last year's DSB Summer Study on "Tactics and Technology for 21st Century Military Superiority"), "USAF Expeditionary Forces" (AFSAB Summer Study 1997), "Future of the Navy" (National Academy of Sciences and Engineering) and Extended Littoral Battlespace (ONR ACTD). Also receive briefings on (1) the geostrategic environment and possible threats in that timeframe; (2) the developing concept to be published in TRADOC Pam 525-5; (3) the results of the Army Warfighting Experiments (AWE) and, (4) possible AAN concepts of operations and the lessons learned from the AAN wargames.

b. Identify joint missions, with an emphasis on land combat, that integrate the concepts/visions with those identified above and AAN.

c. Identify technology drivers and enablers for the Army beyond 2010 and the identified joint mission concepts. Identify and place particular emphasis on those emerging technologies that are robust in that they support a variety of emerging concepts of operations and that require maturing or are inadequately funded. Comment on the adequacy and direction of military and private-sector research and development activities and investment strategies in advancing and achieving AAN goals and objectives. The technologies should support: rapid and decisive force insertion and extraction, survivability and force protection, command, control, and communications (C^3--on the move and at extended ranges), strategic maneuver, precision strike, precision engagement, sensors to detect and localize targets, real-time situational awareness at all echelons, and effective logistical combat services.

d. Review and comment on the Army's present Science and Technology strategy in support of the Army Experimentation Plan and the AAN. Comment on cooperative S&T opportunities with DARPA, the other Services, NASA and the National Laboratories. Indicate how US industry can be involved.

e. Develop a technology exploitation and overall investment strategy (not just S&T) for the Army to move toward and realize advanced concepts and capabilities out to about 2025.

Study Support. Cosponsors of this study are LTG Paul J. Kern, Military Deputy to the Assistant Secretary of the Army (Research, Development and Acquisition); LTG Thomas N. Burnette, Deputy Chief of Staff for Operations and Plans; LTG John N. Abrams, Deputy Commanding General, TRADOC; and LTG Dennis L. Benchoff, Deputy Commanding General, AMC. The Study Cognizant Deputies are Dr. A. Fenner Milton, Deputy Assistant Secretary for Research and Technology; BG Robert St. Onge, Deputy Director for Strategy, Plans and Policy, ODCSOPS; MG Robert T. Clark, TRADOC Deputy Chief of Staff for Combat Developments and BG Edward Buckley, TRADOC Deputy Chief of Staff for Doctrine; MG John Caldwell, DCS(RDA), AMC. The primary staff assistant is Dr. John Parmentola, OASA(RDA). Other staff assistants are LTC John Medve, ODCSOPS; COL James F. Bald, Jr., AMC; LTC Henry Franke, TRADOC; Dr. Bert Smith, ODCSINT; Mr. Mike Hendricks, ODCSLOG; Mr. Roy Cooper, OASA(RDA).

Schedule. The study panel will initiate the study immediately and conclude its effort at the report writing session to be conducted 13-23 July 1998 at the Beckman Center on the campus of the University of California, Irvine. As a first step, the study co-chairs will submit a study plan to the sponsors and the Executive Secretary outlining the study approach and schedule. Conclusion of this study group will result in a final report to the sponsors in December 1998.

Special Provisions. It is not anticipated that this inquiry will go into any "particular matters" within the meaning of Section 208, Title 18, of the United States Code.

Sincerely,

Kenneth J. Oscar
Acting Assistant Secretary of the Army
(Research, Development and Acquisition)